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REPORT AND RECOMMENDATIONS
of the
MARKETING RESEARCH AND SERVICE ADVISORY COMMITTEE
Developed at its Meeting in Washington, D. C.
December 9-12, 1963

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PREFACE

The first meeting of the Marketing Research and Service Advisory Committee was held in Washington, D.C., on December 9 through 12, 1963, with twelve of the fourteen members present. Members unable to attend were: A. F. Gamble, Denver, Colorado; and Don J. Wickham, Albany, New York.

As a basis for its recommendations and comments, the Committee made a systematic review of the Department's marketing research and service programs as summarized in a progress report made available to the Committee in advance of the meeting. The progress report material was supplemented by oral reports, visual materials, and discussion by program leaders from the following USDA research divisions and agency units: Market Quality Research Division and Transportation and Facilities Research Division, Agricultural Marketing Service; Marketing Economics Research Division, Economic Research Service; Standards and Research Division, Statistical Reporting Service; and marketing work of the Farmer Cooperative Service.

Following consideration of the marketing research program of the Department, the Committee reviewed research in the Agricultural Research Service closely related to marketing and consumer problems. It also considered progress being made in the marketing service programs of the Agricultural Marketing Service, especially work in grades and standards and market news; foreign market development programs of the Foreign Agricultural Service; marketing programs of State Experiment Stations; and, marketing educational work in the Federal Extension Service.

Dr. George L. Mehren, Assistant Secretary of Agriculture, served as Chairman of the Committee, and Dr. Omer W. Herrmann, Deputy Administrator for Research, Agricultural Marketing Service, served as Vice Chairman.

After careful review of the information available, and based upon current and future need for new knowledge and the seriousness of problems faced by the industry, the Committee made the comments and recommendations included in this report to the Secretary of Agriculture.

COMMITTEE COMMENTS AND RECOMMENDATIONS

I. ECONOMIC RESEARCH

Food Distribution Programs. The Committee believes that research studies of the operation of the food stamp, school lunch, and other food distribution programs should be continued at levels adequate for effective appraisal of these programs, and to provide the guidance needed for their improvement and efficient operation.

Food Consumption Survey. The Committee is gratified to learn that a new decennial food consumption survey is proposed. The previous survey in 1955 made a major contribution to marketing information, but is now long outdated. It is recommended that full support be given to those survey phases that will provide the marketing industry with adequate information on changing levels and patterns of consumer food purchases and expenditures.

Market Potentials For New Products and New Uses. Research in the area of market potentials should be continued as it plays an important roll in connection with the extensive program of utilization research in the Department, both through guiding fruitful directions of such research and through testing and helping to improve the marketing feasibility of new products as they are developed.

Merchandising and Promotion. Department programs related to merchandising and promotion should be designed primarily to aid producer associations and agencies to more effectively use promotional expenditures, and to provide a basis and encouragement for closer cooperation by trade associations in timely promotion programs, which would more effectively move agricultural commodities into markets and increase the consumption of agricultural commodities.

Economics of Transportation and Storage. The Committee commends the Department for the improving program of research on economics of transportation and storage, the results of which are receiving wide and favorable attention. This research should continue to be strongly supported. The Committee recommends expansion particularly of efforts to fill the gaps in data relating to both highway and domestic water transportation of agricultural commodities and products; the measurement of carrier costs in relation to the level and trend of rates and charges paid by shippers; to problems of hauling exempt commodities by regulated carriers, and to measuring the effects of technological changes in transportation methods as they affect the movement of agricultural commodities.

Economics of Product Quality. Continuing research involving consultation with industry is important with regard to the economics of product quality in order to facilitate updating grades and standards to meet changing needs of marketing industries. This work should involve the adaptation both to

changing product technology and handling and to changing market structure, trading methods and practices.

Marketing Costs, Margins and Efficiency. Work on marketing costs, margins, and efficiency should be continued from the standpoint of maintaining current information and with emphasis on the study of changes affecting the costs of marketing.

Market Structure. The Committee commends the Department for the progress being made in the study of market structure and organization, which is helping to fill important gaps in our knowledge of the marketing system and its operation. This work should be continued with emphasis on the changing structural patterns and their impact on the efficiency of the marketing system.

Information and Outlook. Short term situation and outlook analyses information released in the Marketing and Transportation Situation and other Departmental periodicals such as the Farm Index should be continued. The Committee assumes that the Department will be alert to changing conditions and will add, modify, or delete statistical series, as the need is shown.

Research also should be undertaken to determine the feasibility and impact of economic investments by firms processing and marketing products of agriculture, upon the number and kinds of jobs in each community before and after such investment has been made, with special emphasis on the effect of such industries on agricultural income and employment in rural areas.

The Committee recommends further attention by the Department to the timely relaying of information, through Extension Services and by other means, concerning new Departmental studies relating to improvement of the management of agricultural business enterprises. Pertinent studies available at the Office of Management Assistance of the Small Business Administration, relating to management practices of small business enterprises, also should provide helpful source material for use in conjunction with the USDA program.

Cooperative Marketing. Rapid changes occurring in the marketing system and in transportation affect and increase the complexity of the operations of cooperatives and other marketing organizations. Expansion of research effort is necessary in areas of improved operating methods, and in pooling and pricing. Application of advanced management techniques, sales methods, and improved handling of the transportation functions (physical distribution management or business logistics) should yield large returns to cooperatives. Efficiency of multi-product plants, and size and number of plants in cooperative organizations should be examined carefully for the effects on ultimate net returns to members.

Restaurant and Institutional Feeding. Increased research is needed in the area of restaurant and institutional feeding in order to catch up

with the importance of this large and growing outlet for farm products. In addition to technology and engineering research recommended by the Committee elsewhere in this report, economic research is needed in the growth and changing structure of this industry, and on its specialized production needs, and the potential markets they offer for new and improved forms of products.

Floriculture and Ornamental Horticulture. The Committee recommends expansion and coordination of marketing research relating to floriculture and other ornamental horticultural products. Such research should be built around exploitation of new types of outlets to expand markets for these products. Within this context should be included the study of consumer attitudes and preferences, professional possibilities, and modifications in market structure, to realize the possibilities of increasing consumption through mass market channels.

II. MARKET QUALITY RESEARCH

Instrumentation for Measuring Quality. The research on development of instruments for measurement of quality factors in many agricultural commodities is extremely valuable, and has far reaching possibilities for producing new, effective research tools and objective grading instruments. These studies should be extended to the field of sound energy especially applications of sonic and ultrasonic energy. A top priority should be given to this work.

Insect Control in Marketing Channels. Although the current research program on chemical control of insects across commodity lines is essential, it also would be desirable to initiate an exploration of the broad field of nonchemical control in the marketing channel. To replace or supplement at least some pesticide uses, studies should be made on nonchemical measures, such as controlled atmospheres and temperatures, hermetic storage, electromagnetic radiation, and insect pathogens, and on nonpesticidal chemicals such as attractants, repellants, and physical control agents. Nonchemical control would have most favorable public acceptability. Pesticide residue studies also should have high priority.

Horticultural Crops. Research on quality maintenance during the storage and transportation of citrus fruits is to be commended. Continuation of the investigation on hot water treatment for decay control as an alternative to chemical control is most desirable. The Committee believes it is important to actively continue work to determine techniques for the removal of aromatic polynuclear hydrocarbons from citrus fruits. This work needs to be pursued for purposes not yet deemed critical.

Controlled atmosphere storage studies, hydrocooling and hot water treatment for decay control of apples and peaches show excellent promise. This research should be extended to other deciduous fruits. These studies,

the Committee believes, will provide a basis for evaluation by potential users of techniques recommended by equipment manufacturers.

The development of an objective measuring device for determining susceptibility of potatoes to bruising during handling is progressing, and should be continued to termination of the work. The control of internal and external sprouting has progressed to a point where termination of this work should be considered. The need for postharvest quality control studies of potatoes for processing should be re-evaluated.

Evaluation of controlled atmosphere, hydro and vacuum cooling, and liquid nitrogen as techniques for maintaining the quality of vegetables should be continued. The progress to date is commendable.

Maintaining quality of cut flowers and ornamentals in the marketing channel has not been explored extensively. Research along lines of controlled atmosphere in the packages and for bulk shipments should be extended to include three or four of the major volume types.

Field Crops. Research on insect control for grain, rice, feed and seed is important and should be strengthened. Development of more precise sampling techniques and more rapid quality measuring instruments also should have increased support.

Work on the development of improved grading techniques and new objective measuring devices for dry beans, oilseeds, peanuts, cotton and cottonseed should be strengthened. Studies on inhibiting insect infestation from external sources also should be expanded.

Animal Products. With limited Department facilities to perform the research needed on dairy, poultry, and meat products, the Committee is pleased to learn that contract funds have been made available for this research. The Committee believes that expansion of the Department's "in house" research of these products would not be desirable at this time.

Pioneering Research in Postharvest Physiology. Fundamental research in the postharvest physiology of biological materials is very worthwhile and, the Committee believes, is in balance with the needs for applied research.

III. TRANSPORTATION AND FACILITIES RESEARCH

Planning Marketing Facilities. The Committee recommends that the present program of planning new and improved market facilities at both production and terminal points be continued as outlined. In view of the present large amount of redevelopment and urban renewal activity now going on in most of our major cities which affects terminal markets, additional resources should be made available if proper terminal facilities are to be included

in such redevelopment and urban renewal projects. The Department has developed unique techniques and has valuable experience which should be used to best advantage.

Horticultural Crops. The Committee feels that research directed toward improving equipment, methods of handling, and structures for assembling, shipping and distributing fruits and vegetables should be continued.

The Committee recommends that engineering research be done not only on the handling and packaging of fresh fruit, but in the development of designs for more efficient processing plants (canned, frozen, dehydrated), and the development of better facilities for precooling plums, cherries, apricots, grapes, and other fruits.

Research on improved methods, plant layouts, and designs for handling, packing and storing potatoes should be expanded to include engineering research on potato storage problems in both late summer and fall crop areas of semi-arid regions of the West. This work should be directed towards determining optimum airflow rates and humidity conditions, and development of ventilation systems and humidifiers which will provide the desired rates and conditions at minimum costs.

A relatively large volume of about 40 different types of winter vegetables are grown in the Rio Grande Valley of Texas. Many of the packinghouses in this area were built for handling smaller volumes and fewer kinds of vegetables than they now receive and pack. Engineering research should be initiated to develop improved methods and equipment for packing these "mixed" vegetables and thus develop improved layouts and designs for these packinghouses.

The Committee recommends that research be conducted on improved methods of packaging and transporting flowers and ornamentals. Consideration should be given to developing specialized containers with the proper environment within the container, in order to withstand the wide range of conditions encountered in different methods of transportation including air transport.

Field Crops. The program of properly handling, storing and transporting of vast amounts of grain is very important. The work should be continued and additional resources made available. The Committee is pleased with results of work to date aimed at reducing physical damage to grain through improved loading methods of the various types of transportation equipment employed for agricultural commodities.

A new study should be undertaken in cooperation with other Government agencies if necessary, to insure that grains loaded into ships for export arrive at destination in proper condition. This also may involve developing effective techniques for inspection and fumigation of the foreign and domestic carriers that are used.

The programs under way and planned for design of structures, aeration and drying of grains; improving methods, equipment and environmental storage of peanuts; improving design, equipment, layout and automation of feed mills and plants; and, humidifying cotton storage, seem to the Committee both proper and necessary. The Committee believes that these programs should be continued with such additional resources as may be required.

Animal Products. The program under way and proposed on meat and meat products seems to the Committee, in general, to be proper, providing it is confined to the small operators. The large operators, in the opinion of the Committee, need little help.

The Committee approves the research program on poultry and egg problems as outlined. It is particularly impressed with work on methods, equipment and facilities for cleaning eggs, including the new technique using light for determining blood spots in eggs.

The Committee concurs in the continuance of the program relating to dairy products, and in the Department's plan to train a dairy engineering specialist for additional work in this area.

Consumer Packages and Shipping Containers. Increased work on better packages and shipping containers for fruits, vegetables and flowers for foreign and domestic shipments, considering use of new materials and lighter containers, should, in the Committee's opinion, be immediately undertaken. Acceleration of research on new and improved packaging for cushioning, protecting and displaying dairy products also is recommended. The Committee feels that work should be initiated to improve the packaging of baled cotton which must compete in world markets with cotton from other sources.

Transportation Equipment and Techniques. The Committee is impressed with the possibility of the use of liquid nitrogen as a refrigerant in the transportation of perishables and believes that the cost of these techniques eventually will be economic. This field should be continually investigated from an economic and environmental viewpoint. Work on other possibilities, such as use of cryogenics and thermo-electric devices for cooling should be continued.

Work on containerization, both large and small types, including multi-temperature containers for domestic and foreign transportation should be accelerated. Environmental factors should be carefully considered in this work, keeping in mind the possible use of the container for storage and the back-haul possibilities. It is suggested that combination forms of transportation, such as piggyback and fishyback, also continue to receive adequate attention. It is also felt that research should be expanded in the design of transportation equipment with emphasis on its adaptation to modern material handling methods, and the proper protection of agricultural products during shipment.

Retail Food Operations. The Committee was gratified to learn that a preliminary report on central packaging of meats indicates that by packaging meat at a central point, instead of in the back room of a retail store, sales per man-hour can be increased substantially. The Committee recommends that resources be made available for expanded research in this area.

The checkout system still remains a bottleneck in many retail food store operations. The answer appears to the Committee to be a checkout system that will automatically register and total the price, and record coded information for each item purchased by the customer. The development of the automatic checkout as an originating source for electric data processing systems would provide substantial economies through greater inventory turnover, better retail cost accounting, reduction in pilferage, making possible automatic ordering from the warehouse and better control of the entire front end operation. The Committee urges that research be initiated to develop and improve checkout systems.

Methods of controlling and comparing retail operations used by the retail food industry are primarily based on averages acquired through accounting techniques. Efficiency studies by the Department have developed some optimum operating standards which promise to be more effective in controlling operating costs than present methods. If the present standards can be expanded to cover the complete food store, they could provide a new system of store control that could reduce store operating costs. Research should be expanded to develop store performance standards and ratios and to test methods of applying them to obtain lower retailing costs.

As the phases of the Department's intensive research to improve the grocery, meat, produce, dairy, frozen food, and bakery departments are completed, there is real need to incorporate all of these studies into an overall store layout and design, and to develop a food store layout handbook.

Wholesale Food Operations. The modern food warehouses that serve retail stores and institutional food service outlets (restaurants, hospitals, etc.) are becoming complete supply and service centers to their customers. Research is needed to overcome the many new problems that are developing due to the addition of new departments, especially perishables. Work should be expanded to develop improved facilities, layout, equipment, truck transportation, and operational processors for large and small complete supply warehouses. The food cost to institutional and food service distributors may be greatly reduced by research in this area.

Wholesalers are concentrating their efforts on turnover of merchandise rather than on price speculation and merchandise storage, as was the practice in the past. This requires the manufacturer and processor to do more warehousing and to be able to provide more rapid service in this mechanized inventory control age. The Committee suggests that research be initiated for reducing the cost of storage, warehousing and delivery by food manufacturers and processors.

Improved handling procedures for food products developed in retail stores and warehouses have reduced the costs of these operations substantially, but many additional savings can result from proper application and combination of these results. Research should be initiated to develop production standards for all major retail, warehouse and delivery operations, and to develop the lowest cost alternative methods of handling from the manufacturer through the public warehouse, the wholesaler, and the retail store.

Automated warehouses are currently being used for limited lines of merchandise. Research should be initiated to develop fully automated warehouses with special attention given to the adaptation of automated methods now used in other industries.

Institutional Food Service Operations. The Committee looks forward to the publication of the research on the two programs now under way; i.e., study of efficiency in school-lunch kitchens and serving lines, and the development of a method to determine the wholesalers' costs for servicing various size orders.

Research should be initiated on the design, layout, work methods, quality control, scheduling and equipment for central food preparation for food service outlets. The Committee believes there are substantial savings possible in this area. Preliminary research also indicates that substantial efficiency may be obtained by improving methods of preparing food in institutional outlets. Research should be expanded to develop work methods, equipment and layouts in the baking, cooking, and dishwashing departments.

Nearly one-fifth of the food dollar volume goes through institutional outlets. It is estimated that the present rate of one meal out of four served in a public eating place will be increased in 10 years to one meal out of three. Since the institutional wholesaling industry is made up of thousands of small independent operators, they must depend on a public agency for research assistance. Many operators are willing and anxious to modernize but need guidance and leadership. Preliminary research by the Department indicates that institutional wholesale costs can be reduced with improved facilities, work methods and procedures. A full scale study should be initiated.

IV. MARKETING SERVICE PROGRAMS

Domestic Marketing Service Programs. The Committee commends the Agricultural Marketing Service for the excellent cooperation rendered all agricultural groups and favors the further pursuit of operational procedures related to the improvement of grading standards, inspection methods, market news techniques, and efforts to move into marketing channels foods which are in abundant supply. Considering all aspects of the methods employed for gathering market news, this service should be strengthened.

The Statistical Reporting Service also is to be commended for its efforts to adapt its methods to the changing structure of agricultural production and marketing, and to take advantage of advances in statistical methods. The information provided by this service is of vital importance to industry and also is the foundation for much of the research program. The Committee recommends added support to the efforts to improve the statistical reporting. The Committee also recommends that a critical review be made of the basic data and methodology used in preparation of the pig crop report, in view of the wide area curve that has been showing up in recent releases. The report on "beef cattle on feed" is an excellent one, in the opinion of the Committee.

Foreign Marketing Programs. The activities of the Foreign Market Development Program carried out by the Foreign Agricultural Service are readily recognized by the Committee as economically important and prerequisite to the expansion of foreign trade in this country's agricultural products. This work should continue to be pursued vigorously.

